PROGRAMME TITLE: BSc (Hons) Architectural Technology & Management

PLEASE NOTE. This specification provides a concise summary of the main features of the Programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he or she takes full advantage of the learning opportunities provided. More detailed information on the specific learning outcomes, content and the learning, teaching and assessment methods of each module can be found in module booklets.

1 AWARDING INSTITUTION/BODY UNIVERSITY OF ULSTER
2 TEACHING INSTITUTION UNIVERSITY OF ULSTER
3 LOCATION Jordanstown
4 PROGRAMME ACCREDITED BY British Institute of Architectural Technologists
5 FINAL AWARD BSc(Hons) Architectural Technology & Management with Diploma in Industrial Studies
6 MODE OF ATTENDANCE Full-time sandwich and Part-time
7 SPECIALISMS None
8 UCAS CODE ULS/U20 K235JBSC/ATM4
9 QAA SUBJECT UNIT Architecture

10 EDUCATIONAL AIMS AND OBJECTIVES OF THE PROGRAMME

The aim of the Programme is to provide the graduates with an education that will prepare them ultimately to practice as registered architectural technologists working in parallel with architects.

To achieve this, the Programme will

- Provide a balanced foundation for academic and vocational education in the philosophy, theory and practice of architecture and to acquaint students with the knowledge and skills required to sustain them in careers devoted to the enrichment and improvement of the environment.

- Provide a rigorous study of a broadly based Programme of subjects related to the design, construction, alteration, maintenance repair, provision and management of buildings.

- Enable the student to apply modern information technology to the design and construction process.

- Develop decision-making abilities and an imaginative approach to problem solving and entrepreneurship.

- Expand the students' communicative skills and intellectual powers.

- Stimulate the development of a personal philosophy that will sustain the graduate in his/her continuing academic, professional and intellectual life.

- Equip the student for a wider range of employment opportunities in building throughout the European Union and further abroad.

In addition for students on the Diploma in Industrial Studies:

- To enhance an understanding of the work place.
- To develop personal and professional skills.
11A MAIN LEARNING OUTCOMES

Knowledge and Understanding – of:
This Programme provides opportunities for students to achieve and demonstrate the following learning outcomes:
K1 Physical processes applied to construction and building materials
K2 Performance specifications
K3 Technical conformance of materials and construction.
K4 Maintenance requirements and project manuals.
K5 Quality control process of projects and procedures
K6 Design methods and processes.
K7 Construction industry, roles of the professions and procurement of services.
K8 Health and safety legislation affecting construction industry and projects.

Learning and Teaching Methods that will enable the outcomes to be achieved:
Knowledge and understanding of the subjects are acquired mainly through lectures, tutorials and practical work carried out in the laboratory, field and studio, directed reading, case studies, seminars and IT based resources.

Assessment Methods that enable the outcomes to be demonstrated:
Assessment of the above is principally through closed book examinations, class tests, coursework assignments consisting of reports on laboratory and field work, essays, individual and group projects, a major individual project and dissertation.
11B Intellectual Qualities- ability to:

I1 Evaluate designs, technical solutions, make improvements and assess technological factors affecting design
I2 Negotiate and agree a detailed design from given brief and be creative in technical design solutions
I3 Evaluate detailed designs and present technical design solutions
I4 Creation of production information, (manual and CAD) and schedules
I5 Synthesise appropriate regulatory and legal requirements.
I6 Apply judgement techniques, balanced advice and maintain personal competence needs when offering services to the public
I7 Plan, conduct and report a programme of original research
I8 Take a holistic approach in solving problems, applying professional judgment to balance, costs, safety, reliability, aesthetics and environmental impact

Learning and Teaching Methods that will enable the outcomes to be achieved:
These qualities are developed through exercise classes/tutorials, coursework assignments, individual and group studio design/project work.

Assessment Methods that enable the outcomes to be demonstrated:
The above are assessed through formal examination, class tests and coursework assignments consisting of a range of design/technical work, problem solving, oral presentations and project dissertation.
11C Professional/Practical skills

P1 Develop relations with the construction industry, the professions and procurement of services.
P2 Application of different procurement methods.
P3 Co-ordinate submission of tenders and evaluate tender feedback.
P4 Management of progress of contracts in use and monitor the cost.
P5 Application of health and safety legislation affecting construction industry and projects.
P6 Formulate and test hypotheses
P7 Assess and consider implications of technical solutions on the environment

Learning and Teaching Methods that will enable the outcomes to be achieved:
Professional and practice skills are gained through coursework assignments including laboratory and field work, technical design, problem solving, assignments and studio work with drawing presentations and a substantial final year project and dissertation.

Assessment Methods that enable the outcomes to be demonstrated:
Assessment of the above skills is by project submissions, laboratory reports, field work and project/dissertation. Some aspects are also assessed by formal closed book examinations.
11D  **Transferable / Key skills**

T1  Work in an autonomous, self-directed manner developing the practices of reflection and lifelong learning and be able to present personal ideas to others.

T2  Use scientific literature and take notes effectively.

T3  Communicate effectively with others using visual, graphic, verbal and written means.

T4  Use a range of graphic and modelling techniques from a variety of media.

T5  Application of numeracy and literacy.

T6  Use Information and Communications Technology and give technical presentations.

T7  Manage resources and time and develop strategy in improving own learning and performance.

T8  Use a variety of skills in working with others.

T9  Manage and organise the recording and storage of information.

T10 Demonstrate skills in business and management and organisational procedures.

T11 To be adventurous in technical solutions and show initiative.

---

**Learning and Teaching Methods that will enable the outcomes to be achieved:**

Basic IT, CAD and communication skills are taught in year 1. These are the other skills listed and developed through coursework assignments including preparation of laboratory reports and fieldwork, individual studio work CAD project work and final year project and dissertation.

**Assessment Methods that enable the outcomes to be demonstrated:**

The above skills are assessed by reports on laboratory, fieldwork CAD work, design submission, presentation, final year project and dissertation.
12 PROGRAMME STRUCTURE AND REQUIREMENTS FOR THE AWARD.

PROGRAMME STRUCTURE

The Programme is designed to fill the need outlined in Section A1 and to produce an architectural technology graduate who is competent to work as an active member of a design team. This brings the architectural technologist at graduate level in line with other building related professions. The outline of the Programme structure is shown in figure A4.1 for both full-time with DIS and without DIS (no placement module) and in figure A4.2 for part-time mode.

The full-time Programme is based on the four year thick sandwich format, the first two years being spent in the University, the third in industry and the final year in University. The emphasis in the initial year is on laying theoretical and practical foundations. These are developed and oriented in the second year specifically towards design and building as a process to prepare the student for the year of professional training in industry. The final year of study builds upon the student's industrial experience and upon the skills and knowledge acquired earlier in the Programme, through a process of integration and application to practical problems in building.

The University has introduced the modular Programme structure as part of the design of a single credit framework encompassing all post-16 education provision in the Province.

The Programme has been designed in modular form, with the equivalent of 6 x 20 point modules normally being taken in each of 3 academic years for the full-time mode. In accordance with the University CATS scheme, Year 1 modules have been graded Level "1", "Year 2 and Year 3 as Level "2" and Year 4 as Level "3". (see fig A4.2 for part-time mode) This matrix of modules from related disciplines allows a wide range of specialist topics to be studied, hopefully in common with students from other related professions. This should reduce the artificial barriers between the professions through collaboration, and modify the over-specialised attitudes and role perceptions of building professions.

Education for building should embrace both arts and sciences, since most solutions to building problems demand a consideration of aesthetic, technical, social and economic issues. This balance requires communication techniques and an appreciation of human and cultural factors as well as technical ones.

Year 1
This provides a basic grounding in the fundamentals of Building and Design. A study of Architectural Technology, Building Science and Materials is coupled with Programmes in relevant Mathematics and Building Structures. Design Procedures is introduced early to form the principles of technology. Year 1 also contains studies of Computing, CAD, Communications and Building/Site Surveying. Students with previous qualifications in surveying may be exempt from the surveying element.
A European dimension has been added, with modules incorporating examples of international practice and the inclusion of European architectural journals. Standard Teaching Packages (STP) for European languages are also available for students wishing to take up placement in Europe.

**Year 2**
This develops the themes of study from year 1 together with an extensive introduction to Design Technology, Constructional Law and Professional Practice, Building Environmental Engineering and Building Design and Computer-Aided Design Applications.

The Design Technology module will include the comparison of costing in relation to design. Design presentation and working drawings are produced using computer software, as recommended by architectural practices. This will lead on to more CAD in depth using advanced software, also recommended by architectural practices. By the end of year 2 prior to industrial placement, the student should have a comprehensive understanding of the process of building, design and practice and be competent to contribute to the design team in an architectural practice.

**Year 3**
The professional training year will provide the student with opportunities to apply the knowledge and skills acquired from Year 1 and 2, and benefits from being exposed to the architectural profession in practice to the building industry and from working in a team with other professions. As well as giving opportunities for the application of knowledge, industrial training helps to develop character and realistic attitudes, and to improve students' skills in communication and decision-making. It plays a major part in producing an understanding of the whole process of building design, construction management, and operation, and is a vital factor in preparing students for the final academic year of the Programme. Although the majority of students will find employment locally, it is anticipated that some students will seek placement outside N Ireland.

Details of the industrial training year are given in Section B5. Successful completion of the year's placement in industry will also lead to the award of the Diploma in Industrial Studies. Students with extensive industrial experience may be exempted from the industrial placement year at the discretion of the Board of Examiners and transferred to the non-DIS Programme.

**Year 4**
The final year will extend the students design and application of technology ability by further study of technology based design projects. The CAD module will include a study and application of advanced computer aided design. Other related modules will include the application of management theory to the architectural design and practice, and a comprehensive study of the rational use of energy and the environment. Architectural technology is further developed together with conversion, adaptation and maintenance.
<table>
<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Core</th>
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<tr>
<td>ARC105J1</td>
<td>Design Procedures</td>
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<td>Introduction to architectural CAD</td>
<td>1</td>
<td>10</td>
<td>core</td>
</tr>
<tr>
<td>BLD 101J1</td>
<td>Building Science &amp; Materials</td>
<td>1</td>
<td>20</td>
<td></td>
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<tr>
<td>MAT123J1</td>
<td>Introductory Mathematics</td>
<td>1</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>YEAR 1</td>
<td>SEMESTER 2</td>
<td></td>
<td></td>
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<tr>
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<td>IT/Communication &amp; Surveying</td>
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<td>Building Structures</td>
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<td>ARC304J1</td>
<td>Design Tech &amp; Cost Evaluation</td>
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<td>Building Design &amp; Practice</td>
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<td>BLD309J1</td>
<td>Construction Law &amp; Practice</td>
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<td>SEMESTER 2</td>
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<tr>
<td>ARC301J2</td>
<td>Computer Aided Design Applications</td>
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<td>Construction Technology B</td>
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<tr>
<td>BLD306J2</td>
<td>Building Environmental Engineering</td>
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<tr>
<td>ARC302J4</td>
<td>Industrial Placement.</td>
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<td>YEAR 4</td>
<td>SEMESTER 1</td>
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<tr>
<td>CIV513J1</td>
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<td>ARC502J4</td>
<td>Project (Design)</td>
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<tr>
<td>ARC503J4</td>
<td>Dissertation</td>
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<td>20</td>
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<tr>
<td>YEAR 4</td>
<td>SEMESTER 2</td>
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<tr>
<td>ARC500J2</td>
<td>Conversion Adaptation &amp; Maintenance</td>
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<tr>
<td>ARC504J2</td>
<td>Environmental Conservation &amp; Energy St</td>
<td>3</td>
<td>20</td>
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<tr>
<td>ARC502J4</td>
<td>Project(Design)</td>
<td>3</td>
<td>10</td>
<td></td>
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<tr>
<td>ARC503J4</td>
<td>Dissertation</td>
<td>3</td>
<td>10</td>
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</table>

Potential award: BSc Honours (360 credit points)
13 STUDENTS AND THEIR LEARNING ARE SUPPORTED IN A NUMBER OF WAYS:

- A comprehensive induction for new students regardless of entry level.
- Programme handbook and module booklets.
- Access for students to the Course Director and academic staff.
- Student representation on the course committee.
- Opportunity to address general Programme concerns through student/staff consultative committee.
- Personal studies advisors allocated to each student.
- Opportunity for feedback on academic progress at the end of each semester.
- Guidance and information on safety-related matters.
- Facilities and assistance offered by the library and computer services (ISD).
- Student e-mail accounts and full access to the Internet.
- Department of Student Affairs provides services in the fields of accommodation, health, counselling and guidance, careers, childcare, finance and special needs.
- University has protocols for assessment of students with disabilities.
- Student membership and participation on Professional bodies is encouraged.
- Students Union in conjunction with the International Office, runs an orientation Programme for overseas students.
- Placements unit dedicated to preparing students for placements and finding placement opportunities for students.
- Academic staff visit students on placement.

14 CRITERIA FOR ADMISSION

Candidates must be able to satisfy the general admissions requirements of the university in one of the following ways:

For the full-time Programmes -

YEAR 1 APPLICATIONS

ASKING GRADES

All applications must have the equivalent of GCE or GCSE in
- English language grade C
- mathematics grade C
- science or double award science or physics grade C -NOT biology
GCE – ‘A’ level

240 points to include at least grades C, C @ GCE ‘A’ level to include one from the following: Biology, Chemistry, Technology & Design, Maths, Physics, Technology

VCE – Vocational ‘A’ levels

240 points to include at least grades C, C in double award / 2 single awards @ VCE ‘A’ level in the following:
Construction and the Built Environment or Science

ILC (Highers) (345-395)

B B B C C with at least one of the following:
Maths, Science, Physics, Technology, Biology and Chemistry @ Higher. If no Physics at higher at least grade C or above at Irish Ordinary is required in this subject.

Btec Nation Diploma

Pass with 3 Distinctions and 3 Merits in final year level N111 or equivalent

Acceptable Diploms:

Construction, Land Use and Surveying, Land Administration

Any other new diploma related to Architecture plus
GCSE Maths & English Language @ Grade C
GCSE Double Award Science or Physics/Chemistry/ Biology Grade CC.
If applicant does not have GCE or GCSE in Science or Physics Grade C, must have a merit in Science @ Level N111 or a distinction in Level N11 Btec Diploma.

NCEA National Diploma Construction related

Year 1 entry – Overall pass
Year 2 entry – Overall merit with average of 65%
All applicants must have
@ IO/IH English Language, Maths & Physics or Agricultural Science grade C
@ IO or D @ IH.

NCEA national Certificate Construction Related

Year 1 entry only – Pass with distinction
All applicants must have @ IO/IH English Language, Maths & Physics or Agriculture Science grades C @ IO or D @ IH
Higher National Diploma

Applicants from colleges and FE establishments with subject related HND (eg Architectural Technology)

Year 2 entry
An overall merit with an average of 60%
Refer Year 2 applicants to Programme Selector for decision on whether to interview or not.

Year 2 entry
An overall pass for Year 1 entry
Where HND is not Architectural Technology, evidence is required of design module/s to be included in asking grades. Refer to Selector.

Access Programmes

Science/Science & Technology
Overall average of 55%

Mature Students

Mature Students who do not meet the above criteria please refer to Programme Selector
15  METHODS FOR EVALUATING AND IMPROVING THE QUALITY AND STANDARDS OF TEACHING AND LEARNING.

The following mechanisms are used:

- Formal student feedback is sought on the content and delivery of each module evaluation questionnaire, a free response method or a module forum.
- Upon completion the module team reviews each module. Statistical information, student feedback, content, delivery, assessment methods, resources and proposed enhancements are considered.
- Regular student/staff consultative meetings provide the means of highlighting any difficulties, relating to the Programme, for action, as part of the annual subject review.
- Students are given the opportunity to be represented at course committee and faculty board.
- The programme is reviewed periodically by the British Institute of Architectural Technologists.
- Staff teaching performance is monitored annually through student questionnaires. In addition, staff members participate in peer observation of their teaching.
- Staff appraisal is carried out on a 2-year cycle with attention given to the development needs of the individual staff member.
- There is a Faculty Learning and Teaching Committees responsible for co-ordinating developments and initiatives relating to innovative methods for delivery, technology mediated learning, as well as general resource issues.
- There is a Faculty Quality Assurance and Enhancement Committees responsible for regulating faculty codes of practice relating to Programme management and delivery.
- The University has an active Staff Development Unit provides training/development for staff. Specially, all new members (opportunity is also provided for existing staff) have to pursue a formal teaching qualification (Postgraduate Certificate) and are encouraged to apply for membership of the HEA(Higher Education Academy), it supports and funds specific research/projects into improvement of delivery and overall student experience.

16  REGULATION OF STANDARDS

Assessment rules (see also B3)

General Programme regulations are in accordance with the current University of Ulster “Charter, Statutes, Ordinances and Regulations” and updated annually in the Student Handbook for the Programme.

In modules that are assessed by either coursework or written examination, the pass mark is 40%. In modules that are assessed by a combination of coursework and written examination, the pass mark for each assessment element is 40%.

The pass mark for the award of the Diploma in Industrial Studies placement year is 50%; a mark of 40% is sufficient for progression to the next stage of the Programme.

Classification of the Final Result

Only Level 3 modules contribute to the Honours classification. Each module is weighted in proportion to its credit point rating.
The following percentages are used as a basis for determining a candidates’ overall classification:

<table>
<thead>
<tr>
<th>Class</th>
<th>Minimum Percentage</th>
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</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>at least 70%</td>
</tr>
<tr>
<td>Class 11 (division I)</td>
<td>at least 60% and less than 70%</td>
</tr>
<tr>
<td>Class 11 (division ii)</td>
<td>at least 50% and less than 60%</td>
</tr>
<tr>
<td>Class 111</td>
<td>at least 40% and less than 50%</td>
</tr>
</tbody>
</table>

In order for to be considered for a particular class of Honours degree a candidate must normally have obtained marks in the appropriate range or above in at least 50% of the modules taken in the final level of the Programme.

Award of the Diploma in Industrial Studies

The following are the minimum percentages used in the determining the overall gratings of candidates.

<table>
<thead>
<tr>
<th>DIS</th>
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<tr>
<td>Pass with Commendation</td>
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<tr>
<td>Pass</td>
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</tbody>
</table>

**External Examiner**

- One External Examiner, is appointed for the Programme. His/her term of office is normally 4 years. The role of the external examiner is to moderate and approve examination papers and other forms of assessment, ensure that academic standards are maintained and that individual students are treated fairly. The External Examiner is required to submit a report on the standard of the Programme, assessment and student performance, comparability of these standards with those of similar Programmes, and the administration of the assessment schemes and processes. Detailed duties are as specified in the current University of Ulster “Code of Practice for External Examiners”.
17 INDICATORS OF QUALITY AND STANDARDS

- Teaching staff within the Faculty are encouraged to become accredited members of the HEA. Several staff members have fulfilled the requirements through completion of the PGCHEP and further staff members are in process of gaining the award.
- As well as teaching, most staff are actively engaged in research that informs their teaching. In addition, most have substantial industrial experience prior to joining the University. A significant number are full members of appropriate professional bodies e.g., RIBA, ARB, RSUA, CIOB and ICE.
- All honours degree students normally obtain a suitable one year industrial placement for their DIS year either locally or internationally. Exemption is granted only to students who can demonstrate equivalent prior experience.
- Graduates from the Programmes have substantially better employment prospects than those from other subject disciplines. Most will have paid employment in industry within 3 months of graduation.
- A substantial number of graduates are accepted each year to a one year honours architecture bridging Programme leading to Part 1 RIBA at Lincoln University (Hull School of Architecture). Other graduates progress to MSc Programmes within the School of the Built Environment.
- In the 1998 external Quality Review, the Programme contributed to the Building subject unit and gained an overall 21/24.
### Module Outcome Map

**BSc (Hons) Architectural Technology & Management**

<table>
<thead>
<tr>
<th>Module</th>
<th>Module Description</th>
<th>K1</th>
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<th>K3</th>
<th>K4</th>
<th>K5</th>
<th>K6</th>
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<tr>
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See Section B Programme Specification for key to codes A1 .. etc